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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/670,585	09/28/2000	Walter Rutten	PHD 99,142	9187

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PHILIPS INTELLECTUAL PROPERTY & STANDARDS
P.O. BOX 3001
BRIARCLIFF MANOR, NY 10510

EXAMINER	
VILLECCO, JOHN M	
ART UNIT	**PAPER NUMBER**
2612	

DATE MAILED: 05/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/670,585	Applicant(s) RUTTEN ET AL.	
	Examiner John M. Villecco	Art Unit 2612	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-10 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-5 and 10 is/are rejected.

7)☒ Claim(s) 6-9 is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 28 September 2000 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 5,7.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The title of the invention is not descriptive. A title that is specific to the claimed invention aids examination by reducing search time and increasing throughput. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Objections

2. Claims 4 and 6 are objected to because of the following informalities:

- In line 13 of claim 4, applicant recites the phrase "each time a switch element". This phrasing is unclear. For examination purposes it will be assumed that applicant has inadvertently included the word "time".
- In lines 3-4, of claim 6 applicant recites the phrase "each time one shift register element". This phrasing is unclear. For examination purposes it will be assumed that applicant has inadvertently included the word "time".

Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. **Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pyyhtiä et al. (U.S. Patent No. 6,552,319) in view of Hoffman (U.S. Patent No. 6,437,338).**

5. Regarding claim 1, Pyyhtiä discloses a method of reading out pixels in an X-ray imaging sensor in which adjacent pixels are output together. More specifically, Pyyhtiä discloses detector cells (18) and circuitry for reading out the charge generated by the detector cells through signal lines (66). In Figures 6 and 7, Pyyhtiä shows circuitry for reading out the signal from a 2x2 pixel block. Pyyhtiä discloses that the pixels are activated by the mode and col_ena signals and that the depending on the mode the pixels are output individually or in 2x2 pixel blocks. See column 7, line 25 to column 9, line 49. The incoming address lines are connected by way of AND gate (136). The pixel charge of two neighboring columns are combined to form one output signal. It is interpreted by the examiner that the flip flops (132) are interpreted to be the switching elements.

Pyyhtiä however fails to explicitly disclose that each of the columns includes its own amplifier element. Hoffman, on the other hand, discloses that it is well known in the art to provide each group of reduced resolution pixels with its own column amplifiers. More specifically, for each output region a region pre-amplifier (106) is used to amplify the signals to a suitable level. Therefore, it would have been obvious to one of ordinary skill in the art to provide an amplifier element at the end of each column line so that the signal is amplified to a suitable level.

6. Regarding claim 2, both Pyyhtiä and Hoffman disclose that the binning pattern is predetermined. Furthermore, Hoffman discloses that within each image, specific portions can be

output at higher resolutions. Therefore, Hoffman teaches that the binning pattern is locally variable. See column 3, lines 13-20.

7. As for claim 3, Pyyhtiä discloses the ability to change the resolution of the device while the system is operating. See column 10, lines 5-6.

8. **Claims 4, 5, an 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pyyhtiä et al. (U.S. Patent No. 6,552,319) in view of Hoffman (U.S. Patent No. 6,437,338) and further in view of Fossum et al. (U.S. Patent No. 5,949,483)**.

9. With regard to claim 4, Pyyhtiä discloses a method of reading out pixels in an X-ray imaging sensor in which adjacent pixels are output together. More specifically, Pyyhtiä discloses detector cells (18) and circuitry for reading out the charge generated by the detector cells through signal lines (66). In Figures 6 and 7, Pyyhtiä shows circuitry for reading out the signal from a 2x2 pixel block. Pyyhtiä discloses that the pixels are activated by the mode and col_ena signals and that the depending on the mode the pixels are output individually or in 2x2 pixel blocks. The col_ena signal is interpreted to be the activation means. See column 7, line 25 to column 9, line 49. The incoming address lines are connected by way of AND gate (136). The pixel charge of two neighboring columns are combined to form one output signal. It is interpreted by the examiner that the flip flops (132) are interpreted to be the switching elements.

Pyyhtiä however fails to explicitly disclose that each of the columns includes its own amplifier element. Hoffman, on the other hand, discloses that it is well known in the art to provide each group of reduced resolution pixels with its own column amplifiers. More specifically, for each output region a region pre-amplifier (106) is used to amplify the signals to

a suitable level. Therefore, it would have been obvious to one of ordinary skill in the art to provide an amplifier element at the end of each column line so that the signal is amplified to a suitable level.

Additionally, neither Pyyhtiä nor Hoffman discloses that the signal is converted into a serial signal. Fossum, however, discloses that it is well known in the art to output the signals of resolution reduced images via a serial output. Fossum discloses a multiplexer (21) for outputting the signals in a serial fashion. It is well known in the art that variable multiplexers are used to convert pixels signals to a parallel or serial form for various processing operations. Therefore, it would have been obvious to one of ordinary skill in the art to output the image signals in a serial form.

10. As for claim 5, Pyyhtiä discloses that the flip flop circuits are disposed on switch lines and integrated in the sensor matrix.

11. Claim 10 is considered substantively equivalent to claim 4 with the added limitation of the array being used in an X-ray examination apparatus which includes the image sensor. Both Pyyhtiä and Hoffman disclose that the imager is used in an X-ray imaging device. Hoffman discloses the use of an x-ray source to irradiate the object with x-ray radiation.

Allowable Subject Matter

12. Claims 6-9 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claim 6, the primary reason for indication of allowable subject matter is that the prior art fails to teach or reasonably suggest that the control system includes first and second shift registers for controlling the switching operations of the switch elements in order to connect each switch element to a neighboring line.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:

(703) 872-9306 (For either formal or informal communications intended for entry. For informal or draft communications, please label "**PROPOSED**" or "**DRAFT**")

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington VA, Sixth Floor (Receptionist).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John M. Villecco whose telephone number is (703) 305-1460. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wendy Garber can be reached on (703) 305-4929. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

John M. Villecco
April 28, 2004

WENDY R. GARBER
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600